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On the Ultimate Analysis of Vegetable and Animal Substances. By Andrew Ure, M.D. F.R.S. Read June 27, 1822. [*Phil. Trans.* 1822, p. 457.]

Dr. Ure commences this paper by adverting to the fallacies to which the modes of analysing organic substances hitherto practised are subject; and in detailing the peculiar methods adopted in his own researches, he shows the means of obviating them, and of diminishing the various sources of inaccuracy to which these complicated processes of analytical chemistry are necessarily more or less liable. Where oxide of copper is used, its hygrometric quality has generally been overlooked, or not duly allowed for; and the animal and vegetable substances have not in general been exposed to any process of desiccation sufficiently exact or uniform; the author therefore always used the oxide of copper in some known or ascertained degree of humidity; and he dried the organic bodies in the air-pump vacuum, aided by the absorbent powers of a surface of sulphuric acid in the apparatus, and with precautions which he fully describes. He then details the best means of applying heat for the decomposition of organic substances, and describes a drawing representing the construction of his furnace, and other implements. Lastly, he points out the method of examining the results and products, and gives in detail the analysis of sulphuric ether, as illustrating the mode of computing the relations of the constituents, while the results of the other analyses are, for the sake of brevity, thrown into a tabular form. Dr. Ure concludes his paper with some general remarks on the analytical details. In respect to sugar, he observes, that on comparing pure crystalline sugar with diabetic sugar, the latter exhibits a notable excess of oxygen; and he considers weak sugars (as the refiners call them), in general, to exhibit the same peculiarity.

In applying the atomic theory to his experimental results, the author enlarges on the different views which may be taken of the ultimate constitution of a variety of organic products, and enters at considerable length into details relating to the vegetable acids, with a view of determining with exactness their prime equivalents, and the relative proportions of combined water which they contain in their crystalline states.

The Croonian Lecture. Microscopical Observations on the Suspension of the Muscular Motions of the Vibrio tritici. By Francis Bauer, Esq. F.R.S. F.L.S. and H.S. Read December 5, 1822. [*Phil. Trans.* 1823, p. 1.]

The *Vibrio tritici* is a small worm which infects wheat, being the immediate cause of that destructive disease called Ear Cockle, or Purples. Upon examining the grains thus diseased, the author found them to be the unimpregnated germens, containing masses of a white and apparently gluey mucus, which might be removed in the shape of a firm ball, and which, when immersed in water, and viewed